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NEWS

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WARREN, Mich. -- With Chairman Roger B. Smith calling it "a glimpse of the shape of cars to come," General Motors today introduced the Aero 2000 -- an experimental subcompact with an array of advanced electronic instruments and controls and a stunning aerodynamic design for a practical, four-passenger vehicle.

Mr. Smith told reporters that the sleek, silver-colored model was developed for display at GM's "World of Motion" Pavilion at a new international exposition which opens Oct. 1 at Walt Disney World near Orlando, Fla. But he and other GM officials emphasized that it represented a serious aerodynamic exercise and some of the car's advanced electronics would be appearing on GM's new production vehicles in the future.

"Not every feature on this car will find its way onto a future production vehicle," Mr. Smith said, "but I'm sure many of them will."

Among the advances incorporated into the Aero 2000 are:

-- A four-point air suspension system which automatically keeps the car level and even lowers its ground clearance for higher speed driving where aerodynamics are most important. Contributing to the low aerodynamic drag are flush-mounted glass, a smooth underbody, moveable front-wheel skirts and a spoiler which can be extended from the lower rear body to improve the aerodynamic shape.

-- A single sliding door on each side of the body which can move far enough back to provide better rear seat access than in traditional two-door cars. The doors can be operated either manually or with power assist. Power windows and the car's air conditioning/heating system could be activated by spoken commands using advanced electronics that are able to recognize and respond to voices for which they have been programmed.

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-- A "heads-up" instrumental display which enables a driver to see an electronically generated instrument panel as it is reflected on the lower part of the inside windshield. The driver does not have to look down to see the display. Also employed are a satellite navigation system, full electronic diagnostics, a video camera providing a 180-degree view of the rear in place of mirrors, and radar-assisted braking.

-- In place of a traditional instrument panel, an energy-absorbing restraint bar in front of the front seats carries the CRT map and rear view displays and is designed to provide more protection for occupants in case of a crash. The energy absorber, while still in its early development, compliments a modern interior which is virtually free of protruding controls. An experimental design for lap-shoulder belts is included. The reels which take up the belts are built into the seats themselves and the belts only need to be slipped into a slot in the center console, not buckled as they are today.

-- A single hand controller mounted on the center console replacing traditional steering, braking and throttle controls. While such a controller can be produced, engineers said it is less likely to appear on production vehicles than many of the car's other innovations.

In its exterior dimensions, the Aero 2000 is very similar to GM's new front-drive subcompacts, such as the Chevrolet Cavalier. But Mr. Smith said the Aero 2000 would probably weigh 600 pounds less, and yet provide more interior space for occupants. Compared in profile to a Cavalier Hatchback, the most obvious difference is the Aero 2000's more aerodynamic design -- smoother, lower in the front, with a steeper windshield slope, more glass, and a higher rear.

"With a measured drag coefficient of .230, this new front-drive design is one of the most efficient shapes GM has ever developed for a practical car which can carry four passengers in safety, comfort, and obviously very high style," Mr. Smith said. "But as much as we're learning about aerodynamics, I'm sure even this outstanding design can and will be improved."

GM's most aerodynamically efficient production car is the new Pontiac Firebird, which has a drag coefficient of .309. The Aero-X, an experimental design study which was introduced a year ago, had a drag coefficient of .285.

Mr. Smith said the Aero 2000 represented a continuation of the work which created the Aero-X, and it, in turn, would become yet another stepping stone from which even more advanced designs would evolve. In fact, GM designers said that modifications already made to the Aero 2000 had produced a drag coefficient of less than .200 when tested in GM's wind tunnel.

Overall, Mr. Smith said, Aero 2000 is "one of the most exciting projects I've ever seen -- exciting in its aesthetics, in its engineering innovations, and what it portends for GM's new production automobiles for the late '80s and 1990s. While it is a concept car, it is so spectacular and so innovative that I know it will have an influence on the designers and engineers who are working on GM's advanced designs for production vehicles."

Being so forward-looking, he added, the Aero 2000 will be right at home at the "Experimental Prototype Community of Tomorrow," or EPCOT, which Walt Disney conceived before his death.

GM's "World of Motion" Pavilion is one of eight exhibits at EPCOT Center which are being sponsored by major U.S. businesses. The GM Pavilion will feature a Disney-created ride, which can carry 3,200 visitors an hour through animated scenes that present a lighthearted and nostalgic look at the history of transportation up to an introduction to the future. "Transcenter," the other major area of the pavilion that was created by GM, offers an over-the-shoulder look at the work of designers, engineers, and research scientists in their efforts to create transportation concepts for the future.

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R. B. SMITH ON "AERO 2000" EXPERIMENTAL CAR (8-3-82):

Thanks, Jack, and good morning, everyone. It's a pleasure for me to join in welcoming you all back to the Tech Center again. We've invited you here to give you a glimpse of the shape of cars to come from General Motors.

In just a few minutes, we'll be showing you the results of one of the latest studies conducted by our Design Staff. I'll tell you, it's one of the most exciting projects I've ever seen -- exciting in its aesthetics, in its engineering innovations, and what it portends for GM's new production automobiles for the late '80s and 1990s. While it is a concept car, it's so spectacular and so innovative that I know it will have an influence on the designers and engineers who are working on GM's advanced designs for production vehicles.

We have two representations of this experimental vehicle study to show you today. One is a fibreglass model of the car's exterior -- sculpted in our wind tunnel to a new level of aerodynamic efficiency for a possible production vehicle. The second is a design buck showing the imaginative interior, especially the advanced instrumentation made possible by electronic miniaturization.

While we have not built an operating prototype of this new vehicle, let me assure you that this car was not concocted without regard for practicality. It's designed to carry people in the way they really use their cars. Many of the engineering features represented on this vehicle can be achieved through the advanced technology that GM's designers, engineers and scientists are working with today.

Not every feature on this car will find its way onto a future production vehicle, but I believe a number of them will. In some cases, though, I'm also sure the innovations that are incorporated into this design will be outdated by even more advanced technology by the time we're ready to go into production. I say that because even as we are showing off this car, work is continuing both here at the Tech Center and in all our divisions to further advance the frontiers of automotive technology.

For instance, most of you are probably familiar with the Aero-X which we unveiled a year ago at the Tech Center's 25th anniversary celebration. The car we have to show you today represents a continuation of the Design Staff's efforts to cheat the wind, using our new wind tunnel, and this new design takes the art and science of aerodynamics a dramatic step beyond the Aero-X. With a measured drag coefficient of .230, this is one of the most efficient shapes GM has ever developed for a practical car which can carry four pasengers in safety, comfort and obviously very high style. But as much as we're learning about aerodynamics, I'm sure even this outstanding design can and will be improved.

This car's efficiency in overcoming aerodynamic and mechanical friction would be reflected in its performance and fuel economy numbers. Powered by an experimental, turbocharged 3-cylinder diesel, a car like this theoretically could get better than double the fuel economy of our best current gasoline-powered, front-wheel-drive subcompact. For a frame of reference, the experimental design you'll be seeing is very close in size to our Cavalier family of production cars.

We believe a vehicle like this would be significantly lighter, however, with a curb weight under 1800 pounds. And the designers have provided more usable space for passengers -- 88 cubic feet compared to 83 cubic feet in the Cavalier.

On the design buck, you will be able to see how the turbo-diesel engine would be packaged and the four-point air suspension which could automatically level the car and even lower it at higher speed driving on expressways and interstates when aerodynamic efficiency is so important.

Inside the buck, one of the most interesting innovations to me is the "heads-up" instrument display. By using the latest in microelectronics, the engineers and designers have created an instrument display that is reflected on the lower part of the windshield, so the driver does not have to look down to see the instruments. The instrumentation also includes a CRT satellite navigation system, full electronic diagnostics and a video camera which provides a 180 degree view of the rear in place of mirrors.

In the absence of an instrument panel as such, the navigation and rear-view displays are contained in an energy-absorbing restraint bar. It is one of the ideas we are exploring that might better protect passengers in a crash. One of our goals in designing advanced small cars for the future is to make them even more crashworthy than today's small cars. But you'll see that the car does contain seat belts -- they're new, too. These experimental belts reel up inside mechanisms built into the seats and only have to be slipped into a slot on the center console, rather than buckled. Our idea is that if we can make the belts more convenient, more people will wear them.

In a few minutes, we are going to have technical and design experts discuss in more detail all the innovations on the vehicle, and I'm probably stealing a lot of their material. But I am excited about the potential for using some of these concepts to provide even better products for GM's customers in the not-too-distant future. For example, the sliding door moves back far enough to provide significantly better access to the rear seats. These doors are not operative on the model we have today, but we have developed working versions of them for evaluation on other vehicles; in fact, a Camaro with doors similar to these will be available for you to inspect after our program is over here. These doors can be manual or even power-assisted. Today, power-door locks -- tomorrow, power doors, and one of these days, systems in our cars which will respond to voice controls, so that you can adjust the climate control in your car, for example, by just talking to it.

Yes -- we are moving in this business from evolutionary technology to revolutionary technology -- from being a medium technology industry to becoming a high technology one. And I couldn't be more proud that General Motors, thanks to its outstanding creative and technical people, is the leader in this revolution.

A number of our divisions contributed ideas for the car's innovative features. Delco Electronics, for example, provided many of the electronic controls and instrumentation, Delco Moraine came up with the radar-assisted braking system, Guide developed the tail lights that seem to appear through the sheet metal when actuated, and Buick provided the turbocharged diesel engine. You'll get a chance to see how they all look on the model.

Special acknowledgment is also due to all the suppliers who worked with us to make this vehicle a reality, Goodyear, Firestone, Uniroyal, PPG and especially Libby-Owens-Ford. Without L-O-F's craftsmen, the special glass which contributes not only to the outstanding aerodynamics but to the car's stunning good looks simply wouldn't have been possible.

Now, as Jack told you, we're going to put this exciting automobile in General Motors' "World of Motion" exhibit at Walt Disney World in Florida. Opening October 1 of this year, this new exposition was conceived by Walt Disney before his death as the "Experimental Prototype Community of Tomorrow," or EPCOT.

With its advanced features and modern, efficient design, this car will be right at home in a community of tomorrow -- at least until people are able to buy vehicles with these kinds of advancements down at their local GM dealerships. When that happens, we'll have to do a different kind of personal transportation vehicle for EPCOT -- one that's even more advanced, and I have no doubt that GM's outstanding team of designers and engineers will be just as successful in doing that as it has been in producing the Aero 2000.